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ecs goodie implementation [note that the actual objects used do not have to be ecs objects!!]

A] structures

i) HASH TABLE

keyed by unique name & points to clist & contains an open count

ii) C-LIST

contains current object for an ecs goodie

iii) Local open list in each process [contains local open count]

B] representation in directory

a unique name + Type field (1 word)

18 bit field

C] ecs goodie capability

Contains (in data and) a unique name & type field

D] operations

I) creation of ecs goodie in directory [may not be needed, may have an operation that creates ecs goodies outside directories, and use Hard link to get them into directories]

present a type field (data area) (along with other info for creating a directory entry)

creates an entry with a new unique name field, and type field that presented

II) get an ecs goodie from directory [may be a uniform operation for all objects]

returns a ecs capability with:

Type = "ecs goodie"

options = those indicated by the access key

data = unique name + type field

III) open ecs goodie with a given object

present: ecs goodie capability
object capability — (destroy option must be on open option)

error if at least: i) proper bit not on in ecs goodie options bits.
or ii) ~~type field in data wd of ecs goodie capability does not match that of presented object~~

Then the ecs goodie unique name field is looked up in the Hash table
If found in the Hash table, F-return
if not, make an entry in the hash table for this unique name, point it to a free position in the c-list, place a copy of the presented object capability at this location in the c-list. and set open count in the Hash table entry to 1. (also enter in local process open list and set local open count to 1)

if actual ECS object moved system allocated - charged as fixed space

IV) open ecs goodie (no object presented)

present: ecsgoodie capability

c-list index

look up unique name of data wd of ecsgoodie capability in Hash table.

if not found, F-return

if found, ~~compare type field of data wd of ecsgoodie capability~~
~~with that of the associated c-list entry.~~

~~If no match, error~~

~~If match,~~ [illegible]

check local process open list. If in the local list, bump local count by 1. If not in the local list, place in local list with local count = 1, and bump open count in Hash table by 1

return a copy of the associated c-list entry capability masked by the option bits of the given ecs goodie capability

if actually ECS object charge fixed ECS space to local process

V) close an ecs goodie

present a ecs goodie capability

check local process open list. If in the local list, decrease local count by 1.
If local count goes to zero, remove from local list and decrease Hash table entry open count by 1, If Hash table entry open count goes to zero, delete Hash table entry.
If not in the local list, error

return fixed ECS if actual ECS object

destroy obj if global zero and if ECS object